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ABSTRACT

The growing importance of information technology and innovation in the market place brings with it a need for the better management of professional knowledge for knowledge workers in the New Economy. This paper illustrates some major steps underway at the University of New South Wales, Australia towards building an educational system for IS professionals that can meet the requirements of the Knowledge Economy. The paper describes new multidisciplinary curriculum initiatives and instructional learning developments considered or implemented at the School of Information Systems, Technology and Management. A case study of a course, Electronic Record Systems, is presented. (Contains 14 references.) (Author/AEF)

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IMPACT OF NEW ECONOMY ON IS EDUCATION: A CASE OF UNSW

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

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ABSTRACT

The growing importance of information technology and innovation in the market place brings with it a need for the better management of professional knowledge for knowledge workers in the New Economy. This paper illustrates some major steps underway at the University of New South Wales, Australia towards building an educational system for IS professionals that can meet the requirements of the Knowledge Economy. The paper describes new multidisciplinary curriculum initiatives and instructional learning developments considered or implemented at the School of Information Systems, Technology and Management.

INTRODUCTION

The changing economic landscape, particularly the growing importance of innovations for economic growth and competitive advantage in the New Economy, suggests the need for better management of professional knowledge of future knowledge workers in the field of IS. New-age workers are expected to be skilled at creating, acquiring and transferring knowledge and modifying their behaviour accordingly (Garvin, 1998). They are anticipated to be capable of continually expanding their capacity to create desired results, nurture new thinking patterns, set free collective aspirations and learn how to learn together (Senge, 1990). It is also suggested that inventing new knowledge should be a modern worker's way of behaving or being (Nonaka, 1998).

Organisations' increasing demand for new skills and capabilities for future IS professionals necessitates a corresponding response from the Education sector. In general, these demands have not been adequately addressed (Seufert and Seufert, 1999). Major criticisms are directed at content that does not reflect the cross-disciplinary nature of the field, has no base in reality and does not cultivate creativity and problem solving skills and instructional methods that largely impart knowledge rather than allow constructing it through experience.

The purpose of this paper is to illustrate some major steps made by the University of New South Wales, Australia towards building an educational system for IS professionals that can meet the requirements of the Knowledge Economy. In particular, the paper will describe new multidisciplinary curriculum and instructional/learning developments considered or implemented at the School of Information Systems, Technology and Management.

CONVERGING DISCPLINES

During 1999 the School of Information Systems and the School of Library, Archives and Information Studies at the University of New South Wales joined together to form one new school, the School of Information Systems, Technology and Management (SISTM).[1]

The success of this merger is evident within the teaching programs of the School, which is now able to offer a program of study to students who can select from a range of Information Systems and Information Management courses. At Graduate level the School

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offers a Masters of Commerce in both Information Systems and Information Management. At Undergraduate level it is possible to undertake a dual major in both Information Systems and Information Management.

It should not be surprising to learn that many students are in fact taking up this opportunity and combining courses as diverse as *Systems Analysis and Design* (IS) with *Information, Knowledge and Society* (IM). Yet for many it will be surprising. Despite the inherent similarities between the disciplines of Information Systems and Librarianship until recent times there had been remarkably little interaction between the practitioners.

With a 'traditional' focus on Management Information Systems (MIS) and formal computer based services that meet organizational and operational needs, the strategic significance of Information Systems to business has seen Information Systems aligned with faculties of Business, Commerce and Economics. Librarianship and information science, with its focus on the management of material artifacts, has traditionally been aligned with the Social Sciences and Arts faculties (Buckland, 1999).

The international landscape shifted considerably in the late 1990s when Schools of both Information Systems and the Information Sciences began to change the focus of their curriculums to reflect requirements driven by the internet, networked telecommunications and the new paradigm of knowledge management (Davis et al., 2001). At the School of Information Systems, Technology and Management accounting for change in the New Economy has resulted in the development of new programmes and new courses that reflect a convergence in the way we think about, and teach, digital technology, information content and business management. The case study at the conclusion of this paper reports on this change through the example of one course: *IMGT2703 Electronic Records Systems*.

MULTIDISCIPLINARY CURRICULUM DEVELOPMENTS

During 2000, a special working party, consisting of representatives from the School of Information Systems, Technology and Management and interested parties from other relevant university schools, developed a new stream of multidisciplinary graduate programmes of study. These programmes are articulated to provide a cross disciplinary perspective on E-Business Management, Knowledge Management and Services Management. The following sections present specific details of each new programme as outlined in their respective proposal documents.

E-Business Management

The first special working party report (Special Postgraduate Coursework Programs: E-Business Management, 2000) describes E-Business in terms of 'doing business electronically,' and differently. It recognises that E-Business involves the use of electronic technologies and the internet together to design, produce, and deliver goods and services—at speed, and globally. It also notes that E-Business operates through new business models, where agility is the key to success and organisational strategies, processes, competencies and cultures are fundamentally changed. Another important aspect of E-Business mentioned is that it blurs the distinction between organisations, customers and suppliers in value chains, and alters the meaning of working in, or for a business. The report further identifies that E-Business involves the gaining and sustaining of competitive advantage against a background of industry and institutional transformation—where competitive advantage is to be found through industry recreation, extending the 'reach' of organisations across space and time, the ongoing enrichment of customers, the application of economic principles in new ways, the development and use of new types of law, the use of new forms of cultural affiliation, the inventive application of technology, and new forms of management.

Although the report clearly states that E-Business depends upon technological expertise, ingenuity, and innovation, it also warns that these competencies will be insufficient to drive business success. It suggests that business success will flow from the design, use and redesign of appropriate and effective business models built around the use of e-technologies, and their management in the midst of profound change. Thus, technology, business models, and management are implicated together in creating successful and sustained E-Business outcomes.

Following this discussion, the report proposes a series of Special Programs in E-Business Management that provide multi-disciplinary perspectives on the conditions and drivers of E-Business success. They explore: alterations to work, organisations and management to accommodate and capitalise on E-

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Business technologies; shifts in institutional frameworks which facilitate or condition E-Business—globalisation, communication and information technologies, and economic and legal institutions; transformations in the nature of change, in terms of speed, space, time, interdependencies, and heightened levels of ambiguity; trends, social impacts, long-term effects related to E-Business, and progressive shifts in the nature of E-Business itself.

Knowledge Management

The second special working party report (Special Postgraduate Coursework Programs: Knowledge Management, 2000) provides the following justification for introducing programmes of study in knowledge management. First, the report views *knowledge management* is an emergent response to a 'third wave,' digital or *knowledge economy* that is replacing the industrial society that has prevailed for the last two hundred years or so. Second, the report endorses Drucker's (1993) argument that 'in a knowledge economy the only thing that increasingly will matter in national as well as international economics is management's performance in making knowledge productive.'

Furthermore, it recognises that organisations in the knowledge economy increasingly will inhabit environments that are *chaotic*—where the link between cause and effect becomes difficult to discern, small changes can be amplified beyond comprehension, and the future eludes prediction. The report notes that in this environment, organisations live with an inherent ambiguity, whilst competing on the edge of stability and instability. Only two things are believed to be certain for such organisations—their own decomposition as product/service life cycles rapidly change, and the impossibility of focusing organisational futures around known strategic portfolios. The report argues that survival depends on ceaseless innovation, and a capability to find opportunities for the exercise of new strategies.

The report also argues that, in the knowledge economy, the intellect or knowledge of people will be the primary resource that is accumulated, developed and enhanced in the battle for competitive advantage. It predicts that success will accrue to organisations which can: offer ongoing, enriching service to individual customers, who perceive these offerings not as products but as solutions to their particular problems or needs; establish themselves as integral parts of diverse but relevant value chains that permit the leveraging of resource use, whilst capitalising on their own distinctive capabilities; establish flexible, responsive, proactive—but directed—organisational processes that thrive on change and uncertainty, as means of exploiting market and competitive opportunities routinely and profitably; capitalise on knowledge resources available inside and outside the organisation, through the effective use of technology, diverse cultures, and modes of management that are visionary, change oriented, and inclusive; and mobilise a 'strategic intelligence' that is sufficient to sustain organisational identity and capabilities, whilst negotiating the ongoing, radical change driven by new service offerings.

Finally, the report describes knowledge management as an organisational phenomenon that involves: appreciating differences in types of knowledge and ways of knowing, and their personal, public and cultural manifestations; understanding the underlying economics of knowledge development and use, including the effects of rapid dissemination and the possibility of increasing returns on knowledge resources; accessing forms of legal right and remedy that protect proprietary or user advantages in knowledge resources; appreciating the nature of 'knowledge work,' and the needs and expectations of 'knowledge workers'; appreciating relationships between knowledge, learning and innovation in, and by organisations; designing and negotiating systems for recognising and valuing the knowledge creation and utilisation capabilities of organisations; designing knowledge management architectures, systems and processes in organisations; impacting processes by which knowledge is mobilised, conserved, leveraged and enhanced within organisations; negotiating knowledge creation, diffusion and use within and across organisations and cultures, and in relationships with customers, suppliers and other stakeholders; managing knowledge strategically, in generating new service offerings and enhanced organisational capabilities.

Accordingly, a series of Special Programs in Knowledge Management are proposed and designed to: provide multi-disciplinary perspectives on knowledge management as an emergent organisational phenomenon; provide an orientation to working and managing in contexts where knowledge is a central capability and a driver of organisational success; and provide choice in adapting study programs to academic or work backgrounds and career aspirations or needs.

Services Management

The third working party report (Proposed Special Programs in Services Management, 2001) deals with yet another emerging and ICT based economic development. According to this report, in most Western economies, more than half of the Gross National Product is produced by the 'services sector.' In Australia, the 'services sector' accounts for more than sixty-five percent of Gross National Product, and employs close to seventy percent of the workforce; moreover, it is the fastest growing sector of the economy, and the most resilient during recessions.

The report further notes that so pervasive and important is the services sector becoming that reference is now being made to a services economy as a new 'economic order' or business and management 'paradigm' that will characterise the early twenty first century. However, the report warns that these statistics or characterisations tend to understate the nature of the transformation that is taking place. It reveals that the distinction between goods and services is blurring, both in the minds of customers and in the strategic orientation of organisations. Most products sold not only embody an implicit service (how they will be used); they also are accompanied by a range of ancillary services—to the point where the provision of goods or products is seen simply as part of the provision of services to customers. In this sense, most firms are in the services economy, competing through their differentiated service offerings. According to the report, services thus become the central focus of relationships between any organisation and its customers, and the central focus of organisational strategies and operations.

The report identifies that the critical issue for service oriented organisations is customer satisfaction and enrichment, as assessed in many 'moments of truth.' Consequently, it is being recognised that the *capability* of all those who come into contact with the customer directly or who affect customer experiences in manifold 'moments of truth' is critical to success. For most service oriented organisations this involves the entire workforce. The workforce needs to be *empowered* to represent the organisation in pursuing customer enrichment, and *entrusted* to secure customer satisfaction. It also needs to be *enabled* to pursue such outcomes, in terms of access to information and possession of requisite knowledge, skills and attitudes; such enablement will involve thinking as well as doing, ongoing learning, and capacities for innovation.

The report also suggests that the workforce needs to be seen as the vehicle through which the guiding *strategic intelligence* of the organisation is deployed and realised, as it focuses its endeavours in best representing the organisation. Thus, the workforce needs to understand and embrace the strategic intelligence which guides the organisation. *Location* of the workforce within facilitative structures, work processes and cultures, so that it is capable of generating customer enrichment on an ongoing basis. The report recognises that it is becoming progressively *virtual*—a resource that alters in construction as service offerings vary, and which is increasingly casualised, contract based and mobile.

With respect to managing service oriented organisations the report calls for a new role for management, together with revised approaches to managing. The key role for management will be to leverage the value of the organisation, by creating and re-creating (with all that this entails): A service-orientation; A capable workforce; A guiding form of strategic intelligence; An organisation that is both virtual and agile. This will require new approaches to individual, organisational, and inter-organisational development—as well as new approaches to structuring work, securing commitment, and retaining control.

Consistent with the above discussion, The Special Programs in Services Management are proposed and designed to: provide multi-disciplinary perspectives on Services Management as a social and commercial phenomenon; provide an orientation to working and managing in service oriented environments; and provide choice in adapting study programs to academic or work backgrounds and career aspirations or needs.

INNOVATIVE TEACHING AND LEARNING

One of the major criticisms directed at current IS education is that a large amount of knowledge is imparted to the learner. Another noticeable weakness lies in the neglect of process oriented learning, that is, making the learning and thought process visible in order to develop the learners' metacognition (Joyce and Weil, 1986). There is a call for better balance between the imparting of knowledge to the learner and the learner's own construction of it. A suggestion is made that the quantity of material to be learnt by telling should be reduced to a minimum and that the lesson time should instead be devoted to the cultivation of such qualities as problem-solving, decision making and creativity through

self-directed and collaborative learning. The complexities of learning and the large number of interacting factors which affect individual and group learning present many challenges. The following sections provide an overview of the latest innovative approaches proposed and considered for the use at the UNSW's School of Information Systems, Technology and Management in a series of discussion documents.

Technology-Mediated Teaching and Learning

The Discussion Paper on Technology–Mediated Teaching and Learning (2001) states that the design of quality learning draws on the full range of digital and analogue media for its purposes. Currently, the Internet and other networked technologies attract the most interest. The document looks to technology to provide mechanisms and media to support learning strategies in three main modes: Adjunct—in which the technology supplements a course of study offered principally face-to-face; Mixed—in which technology partly replaces elements of traditional class interaction; and Online—in which all the content and processes of interaction are supported by technology.

The document identifies the following as desirable ways in which online technology is used for the three modes of learning described. *Access to a well-structured knowledge base*: Using universal Internet standards, the student can access quality learning materials on demand, which are superior to those available or manageable in face-to-face settings; *Active engagement with content:* On the Internet, this is supported through the setting of tasks that may be published to the group or privately to the teacher via email or a student website. Other active engagement may be achieved through the development of pre-programmed interactive components or simulations that are made accessible through computer labs, face-to-face classrooms or online; *Interaction with the teacher*: Online discussion and dialogue may be held both synchronously through 'chat' sessions or more commonly through asynchronous discussions and bulletin boards. In a fully online course, this is the principal channel of communication within the group, but also in mixed and adjunct modes, it can facilitate interaction over and above that possible within the constraints of a face-to-face class. *Opportunities for interaction with other learners:* The online discussion group also enables student-to-student interaction that may be informal and initiated by the learners or a formal group task set by the teacher; *Individual reflection on learning:* Online learning incorporates explicit instances for reflection and reporting on cognition. Teachers also require ways to look back on the learning process and adjust strategies and activities to redress misconceptions; *Feedback and formative assessment:* Online groups offer an achievable and retrievable record of class interactions as a forum for formative feedback. Individual and confidential feedback may be provided via private threads or email.

Furthemore, the document recommends that these processes within the School should be enabled through *Support for development* and adequate *infrastructure*. *For teachers*, the recommended support is in the form of: Guidelines regarding minimum standards for course development, design, and delivery; Processes and criteria by which learning materials are to be reviewed; Workshops and individual support in educational design in response to the specific needs of courses offered within a discipline. Technical assistance for staff in content design and interactive media production; Assistance in the transition from classroom to online learning processes, and in the development of adjunct materials through the modeling of best practice; Provision of feedback, in the form of reports from the learning system, on issues arising from student use of mediated learning material; Opportunities to share and discuss practice within the School through the formation of a learning community. *For Students*, the recommended support is in the form of: Specific information about the mediated learning and its use in each course, in addition to the basic *Course Outline* requirements; Training and information to equitably access courseware and other UNSW online resources; Access to technical assistance throughout the duration of a course/program; Prompt and accurate response to inquiries, which will be logged and recorded for later analysis; Opportunities to evaluate and comment on the teaching and learning process throughout a course.

The document also suggests that the School needs to provide necessary infrastructure for the mediated teaching and learning purposes. This infrastructure includes: a technology plan that includes electronic security measures (i.e., password protection, encryption, back-up) to ensure quality standards and the integrity and validity of information held within the online teaching system; a local intranet, accessible to staff and students to enable high-speed access to email, courseware servers and teaching spaces; high-capacity local servers, to store and structure repositories of media content for courses; high speed connection with the external internet, to enable access to the resources and

connectivity of this global resource; modem connections for students to access School courses and course repositories from off campus; access to, and support for the software necessary to enable discipline discourse for both on and off campus groups; technical support for commonly used computer platforms and software, which is reviewed annually in the light of new technologies; templates for commonly used educational strategies, student and course web pages to minimise preparation time.

Interactive Teaching and Learning

The promotion of interactive teaching and learning within the School by The Discussion Paper on Interactive Teaching and Learning (2001) reflects recent research into student learning, serves to build a community of practice which values and accommodates student diversity in learning, and is likely to improve the quality of learning experiences and satisfaction with the outcomes. Both staff and students are supported in various ways, to make the most of opportunities for interactive learning and to develop their own skills in interaction. A commitment to moving towards more interactive teaching practices is expected to enhance the quality of learning in the School.

In this discussion paper, learning is recognised not only a process of cognitive development for the individual but also a social process of engagement with others within the learning environment. Recent constructivist theories of learning, place the individual as an active participant in her/his environment, rather than a passive recipient of stimuli. Learning is seen as a process in which the student constructs new knowledge, skills and understandings in response to her/his environment, continually integrating new experiences and information into existing cognitive structures and ultimately transferring that knowledge to new situations. The emphasis is on the *processes of learning*, rather than curriculum content. Principles of so-called deep learning also encourage active engagement with both content and other learners, along with opportunities to reflect on, and consolidate new knowledge into an existing knowledge base. The document supports Vygotsky's description of the ideal as a 'zone of proximal development' in which the individual learner can continually expand knowledge, skills and talents within a supportive framework or scaffold provided by the teacher and institution. Eventually, the ideal graduate becomes an independent learner who can maintain the process of knowledge construction outside of the safety of the institution.

Furthermore, the document suggests three main reasons to teach interactively. First, interactive teaching offers some insight into what students actually know. This is its *summative* function, as it leads to testing and measuring student knowledge and understandings through questions, tests and exams. Second, interactive teaching is *formative*. The teacher seeks to direct students' cognitive processing along particular paths through conversations or dialogue. The resulting cognitive experience of the students will move them towards accepted conceptions of the topic within the discipline. Third, interactive teaching is *motivational*. A teacher has a responsibility to keep students interested, and this is more easily done when the student is actively involved. When teachers ask students to work in small groups on a case study or problem, the resulting discussion not only serves to build new knowledge, it also serves to motivate students. The anticipation of feedback from their peers or the teacher is a strong incentive. Interactive teaching methods can address each of these issues. Through well-designed learning processes, new material can be integrated into a student's existing set of knowledge constructs in a way that provides for a deeper level of understanding to occur.

The document notes that the following five skill-sets of teachers are seen to be associated with effective interactive learning by students: Using and Developing Professional Knowledge and Values; Communicating, Interacting and Working with Students and Others; Planning and Managing the Teaching and Learning Process; Monitoring and Assessing Student Progress and Learning Outcomes; and Reflecting, Evaluating and Planning for Continuous Improvement. In order to promote, maintain or develop these skill-sets by its academic staff, the School provides: opportunities for staff to discuss and evaluate interactive teaching; regular dissemination of current developments related to interactive teaching of disciplines of the School; technical resources, teaching spaces and infrastructure necessary for the conduct of a variety of desirable modes of active and interactive learning; staff development activities, such as workshops, seminars and individual coaching to build these skill-sets; time release for the planning and coordination of interactive teaching strategies across Courses and Programs.

In addition, the document recognises that students also need specific competencies, guidance and support if they are to maximise their opportunities to learn interactively. Such opportunities are enhanced by:

Explicit statements by the School of expectations for student participation in learning. These statements should be communicated in advance of study through orientation and induction programs, and ideally should become an sign of the learning culture of the School; Skills in written and spoken communication sufficient for active learning by individuals and positive contributions to the learning of others; A level of metacognition by students regarding their own learning styles and preferences, and an appreciation of the role that culture and upbringing play in determining cognitive frameworks and learning; Self-management skills in identifying goals, setting priorities and independently managing time and resources towards meeting the expectations of a course; Sufficient levels of technological literacy to access the learning materials and processes offered by staff. Support mechanisms, both educational and social, to address skills deficits or other impediments to participation and learning; Mechanisms by which students can provide evaluative feedback to staff in order to improve the design of learning processes.

Cross-Cultural Teaching and Learning

The Discussion Paper on Cross-Cultural Teaching and Learning (2001) reflects the commitment of staff and students to the development of effective cross-cultural learning in the school. This document is part of an ongoing discourse about the kinds of students we have enrolled in our School and the ways in which we wish approach their education.

The document defines culture broadly as a set of values and beliefs shared by a group of people. Membership of such groups may be determined by birth, by choice or life circumstances. Cultural values and beliefs may be anchored by ethnicity, gender, religion, nationality and language. Students and staff in the School of School of Information Systems, Technology and Management have a range of cultural backgrounds and affiliations. In particular, the cultural diversity of students is striking. This diversity poses a number of critical issues for teaching and learning in the School.

In order to help both teachers and students become more culturally aware of themselves and others, and to manage cultural diversity in the School, the document proposes the following eight principles:

1. *Be Consistent.* We need to start by creating an environment in which the rules of interaction are apparent. Rather than trying to second-guess the competing expectations or prejudices of all, create a new 'culture of the classroom' as a model for managing diversity and use this to mirror the global workplace. People respond to clear direction, especially in socially and culturally sensitive contexts or in processes in which they are unsure. A teacher may spend some time during the introductory weeks of a course negotiating what is expected and acceptable to the group regarding interaction, group work, questions and respect. Staff and students should be confident that the general expectations are consistent across Programs and reflect those of the professional world.

2. *Provide Information.* Wherever possible, be aware that miscommunication is the greatest impediment to learning and seek to provide information to all in accessible ways. Course content and assessment details, for instance, can be communicated in the Course Outline, on a website, in class and in individual consultations. Especially in the beginning, take the time to ensure that students have time to become familiar with the class culture and its expectations, and provide information in multiple forms.

3. *Encourage Communication.* As communication is the essential process whereby learning occurs, foster opportunities for students to express themselves. This will involve the use of questioning, discussion, debate class presentations and open invitations to contribute personal experience to cases studies. In class, allow 'wait time' in all interactions to encourage some individuals to overcome their desire to avoid participation. Ask if students know of other ways of approaching issues. Confirm and validate contributions with recognition and thanks. Give notice of a request for participation—don't spring a surprise on an unprepared student.

4. *Avoid Stereotyping.* Stereotyping is how novice learners first sort and process different phenomena. They create large, easily managed categories that make sense of unfamiliar information. However, as expertise grows, learners modify these categories to differentiate the detail found in individuals.

Eventually, we become intellectually aware of individuals differences and can appreciate the dangers of generalisation. If stereotypes are used, for instance, in case studies, recognise this and explain why. Look beyond immediate physical and language differences to seek understandings of intention.

5. *Avoid Ethnocentrism.* Appreciate that there are many views of the world. Avoid deficit models in which we suggest that other cultures simply lack some qualities that we value. Asian students consistently display higher scores on deep approaches and lower scores on surface approaches to learning despite the conception that they want to 'rote' learn content. Promote equitable participation by all, rather than dominance by a few.

6. *Involve Others in Your Development.* To see ourselves as others do is difficult. Check your perceptions with colleagues, and invite peer review of your style of teaching and interaction. Ask others to help monitor your language and interpersonal dynamics. Ask peers to suggest and share techniques for motivating classroom interaction.

7. *Be an Example.* Model inclusive language and behaviour where possible. Carry this through to the handouts, notes and OHTs used in class. Also, admit to uncertainties and ask others to suggest strategies in difficult situations. Seek to use global examples and analogies when illustrating a point. Avoid jargon or colloquialisms and model active listening.

8. *Structure Group Work to Manage Diversity.* Make the team dynamic and its management a part of the assessment. Allow members to contribute in writing as well as verbally. Provide planning sessions to allocate responsibilities and follow-up with support. Make sure each member can access the information necessary for their component of the task—some overseas students do not have the same networks and resources as local students. Don't force representational membership of groups, allow students with a common culture to work together.

CASE STUDY

IMGT2703: Electronic Record Systems

Background

When the School of Information, Library and Archives study joined with Information Systems in 1999 it brought with it the core subjects of an established programme in Information Management. The programme is accredited with the Australian Library and Information Association, Australia's profession organization for the library and information services sector. Among the core courses was provision for a course in *Organisational Recordkeeping: Rights & Responsibilities*. This course had previously been taught as part of an Archives and Recordkeeping programme which has not been continued within the new School.

Although the Archives and Recordkeeping programme was not continued the importance of electronic records, document management and digital content management in networked information systems was widely accepted and provision made in 2001 for the continuation of the course.

During 2000-2001, the School reviewed national and international curriculum developments in the field of electronic records and document management. The result of the review was the development of the course as it now stands. The current curriculum was taught for the first time during Second Semester 2001 and it is being taught again for Second Semester 2002.

Course Description

IMGT2703 provides an introduction to best practice in the management of electronic records. Issues that impact on electronic records management are the focus of the course. These include legal requirements, accountability and the

role record management systems play in managing documents as strategic resources. The course covers current approaches concerning electronic records management, the records continuum and strategic organisational planning for information systems infrastructure.

It examines methodologies and technologies for managing electronic records within the context of networked content management. It addresses the role of Metadata, Extensible Markup Language and Electronic Document Management Systems in managing recorded information as corporate assets.

Cohort

The course has demonstrated a broad appeal to undergraduate students from diverse fields of study. Enrolments for the first two years have included students from Accountancy, Computer Science and Software Engineering, with the majority of students attending the course enrolled in the double major of Information Systems and Information Management. Although numbers are still small, with a total enrolment 20 students for Second Semester 2002, what has been surprising is that over a quarter of these students are enrolled in Computer Science or Software Engineering Degrees.

E Business Management

The course empahsises an awareness of the impact of technologies on documenting business activities. A focus is placed on corporate accountability and the legal requirements for evidence of business transactions. Understanding the relationship of these requirements to the design and implementation of electronic record systems is a key objective of the course. Document design and metadata requirements for recording online transactions are examined.

Knowledge Management

The focus of the course is on managing information as a corporate asset. Indexing, metadata and information retrieval concepts from archival science and librarianship provide a foundation for managing records as an information resource. The role records play in corporate memory and organisational knowledge management are examined. The cultural, community and social contexts of recorded information are also investigated and students show a keen interest in exploring topics in this area, e.g. vital records and records of national significance, freedom of information & privacy, corporate accountability, as part of their research project.

Service Management

The course addresses recommendations proposed by Special programs in Services Management, focusing on digital library service models and digital content management models for publishing and managing electronic documents. Requirements for managing electronic records systems have structural similarity to the digital library and content management service models.

Innovative Teaching & Learning

The appeal of the course to computer science and software engineering students was not anticipated. During discussions with the class, students have indicated that this appeal is derived from two aspects of the course:

1. An emphasis on an analysis of the digital object itself (electronic records and documents)

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CASE STUDY
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2. The course's emphasis on the use of information technologies in instruction

Document Design and Metadata Laboratories

Using the Extreme programming model of *programming partners* as its reference frame, students 'team-up' in pairs for the course's computer laboratories. During the labs they follow self-directed tutorials designed to introduce SGML/XML and metadata. The labs focus on concepts of logical document design and descriptive metadata and are supported by group sessions (a design workshop) where the relationship of the document and its internal structure to information systems is modeled and discussed. During the second half of semester students gain experience with TRIM, a commercial electronic document management system.

Online Discussion Forum

This year, for the first time, an online discussion forum has been added to the course. The discussion forum, which is structured around formal coursework has been an extremely successful interactive learning activity.

During the semester students are presented with three discussion topics. Each forum is structured around a problem statement or an issue derived from a course reading.

After reading the article for a topic students select to either champion or challenge the discussion topic. Each topic continues for a period of three weeks during which time each student is required to make at least two contributions to the forum. Most students are posting at least three comments to each forum with many students posting four or five times on a topic.

Although students are encouraged to keep postings informal and brief the average posting tends to be about 150-200 words in length. Many postings include references to readings that students identify through their own research and a healthy debate around new and unexpected points often ensues.

The course has a large number of students for whom English is a second language; for these students the forum is proving to be a successful cross-cultural leaning environment. All students are encouraged to express themselves in natural language: text messaging abbreviations (SMS style) and emoticons are welcome.

As time progresses students are beginning to use the forum to discuss the course in a wider context and are using the space to help each other with research.

ENDNOTE

1. The merger is not unique; other examples include the formation of the *School of Information Management and Systems* at Monash University, Victoria, Australia & the *Graduate School of Information Management and Systems*, UCLA, Berkeley.

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